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10/530,996	09/26/2005	Gerhard Jonschker	4836-000015/NP	2160
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HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			NGUYEN, TRI V	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/530,996	<b>Applicant(s)</b> JONSCHKER ET AL.
	<b>Examiner</b> TRI V. NGUYEN	<b>Art Unit</b> 1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 09 October 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,2,4-8 and 10-20 is/are pending in the application.

4a) Of the above claim(s) 11,12 and 20 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1, 2, 4-8, 10, 13-19 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/06)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Upon entry of the amendment filed on 10/09/08, Claims 1, 4 and 7 are amended; Claims 11, 12, 20 are withdrawn and Claims 3 and 9 are cancelled. The currently pending claims considered below are Claims 1, 2, 4-8, 10, 13-19.

With respect to the provisional ODP rejection, Applicants state that a TD will be filed upon indication of allowable subject matter. It is noted that the provisional ODP is maintained until such time Applicants submit a timely filed terminal disclaimer.

Based on applicants' remarks and amendments, the 112(2) rejections, 102 rejections and 103 rejections of Zuechner in view of Hamers are withdrawn; however, the 103 rejections are maintained.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 2, 4-8, 10 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soane et al.

Soane et al. disclose a textile treatment agent that includes inorganic nanoparticles that are surface modified and various ingredients such as surfactants and fragrances (abstract, § 13, 81, 89-97, 124, 130 and 143). Furthermore, Soane et al. disclose the features of various textiles such as cotton, wool, silk and synthetic fibers (§ 93), a concentration of nanoparticles of 0.1 to 95% (§96), cationic nanoparticles (§ 97) and a diameter range of about 1 to 1000 nm (§

81). It is noted that the inorganic surface modification is also met by the teaching of the silica or silane coated inorganic nanoparticles (§ 120-126, 133 and 134).

However, the Soan disclosure is insufficient to anticipate the above listed claims such as selection of a specific ingredient, it would have nonetheless been obvious to the skilled artisan to achieve the composition, as the reference teaches each of the claimed ingredients within the claimed proportions for the same utility and such modifications are recognized as being well within the purview of the skilled artisan to yield predictable results. In particular Soane et al. disclose the claimed composition, however, fails to specifically disclose a composition comprising the agents, thickness and diameter ranges in the amounts as those recited by the Applicant.

Regarding the thickness of the layer, Soane et al. disclose nanoparticles being in the same range as applicants to coat the textile thus it would be obvious that the thickness ranges would fall within the same range (abstract and § 81).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges disclosed by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re*

Woodruff, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I. In the instant case, it would have been obvious to optimize the components based on the desired effect - see the various modifications shown in the examples starting on § 99.

Regarding the inorganic surface modification agent being a Lewis acid, Soane et al. teach the nanoparticles being contacted with a magnesium chloride and sodium chloride (§ 95 and 97); thus the same resulting effect would be expected since each of the ingredients are present.

4. Claims 1, 2, 4-8 and 16-19 are rejected under 35 U.S.C. 103(a) as obvious over Zuechner et al. (WO 01/83662 cited in the IDS - the English equivalent US 2004/0023824 is referred to hereon).

Zuechner et al. disclose a finishing textile agent that includes inorganic nanoparticles such as silica that are surface modified by various chemicals and additional ingredients such as surfactant, thickeners and perfumes (abstract and § 11, 16-22, 32, 36, 67, 77, 88 and 126). Furthermore, Zuechner et al. disclose the features of various textiles such as cotton (§ 12), a concentration/content of nanoscale particles of 0.01 to 35 % by wt (§ 14-15) and a particle size of 5 to 500 nm (§ 10-11).

However, the Zuechner disclosure is insufficient to anticipate the above listed claims such as selection of a specific ingredient, it would have nonetheless been obvious to the skilled artisan to achieve the composition, as the reference teaches each of the claimed ingredients within the claimed proportions for the same utility and such modifications are recognized as being well within the purview of the skilled artisan to yield predictable results. In particular Zuechner et al. disclose the claimed composition, however, fails to specifically disclose a composition comprising the agents, thickness and diameter ranges in the amounts as those recited by the Applicant.

Regarding the thickness of the layer, Zuechner et al. disclose nanoscale particles being in the same range as applicants to coat the textile thus it would be obvious that the thickness ranges would fall within the same range (abstract). Furthermore, the surface modifying agent such as polysulfonates is present in the amount of 1 to 8% wt (§ 16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges disclosed by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I.

5. Claims 1, 2, 4-8 and 13-18 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rohrbaugh et al. (US 2002/0151634).

Rohrbaugh et al. disclose a coating composition that includes inorganic nanoparticles such as oxides and silicates that are surface modified by various chemicals and additional ingredients such as surfactant, softeners and perfumes (abstract and § 44-46, 58, 59, 123, 124 and 197). Furthermore, Rohrbaugh et al. disclose the features of various textiles such as cotton

and synthetic fibers (§ 26), a concentration/content of nanoscale particles of 1 to 100 % by wt and 0.01 to 5% of the coating composition (§ 79), a particle size of 2 to 750 nm (§ 44) and a cationic particle charged via a Al<sup>3+</sup> salt (§ 69).

However, the Rohrbaugh disclosure is insufficient to anticipate the above listed claims such as selection of a specific ingredient, it would have nonetheless been obvious to the skilled artisan to achieve the composition, as the reference teaches each of the claimed ingredients within the claimed proportions for the same utility and such modifications are recognized as being well within the purview of the skilled artisan to yield predictable results. In particular Rohrbaugh et al. disclose the claimed composition, however, fails to specifically disclose a composition comprising the agents, thickness and diameter ranges in the amounts as those recited by the Applicant.

Regarding the thickness of the layer, Rohrbaugh et al. disclose nanoparticles being in the same range as applicants to coat the textile thus it would be obvious that the thickness ranges would fall within the same range (abstract and § 44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges

disclosed by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff*, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I. In the instant case, it would have been obvious to optimize the components based on the desired effect - see the various modifications shown in the examples starting on § 189.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soane et al. as applied to the claims above, and further in view of Hamers et al. (US 2004/0025262).

Soane et al. disclose the claimed textile agent but do not explicitly disclose a surface modifying agent being a Lewis acid that is AlCl<sub>3</sub> or ZrOCl<sub>2</sub>. In an analogous art, Hamers et al. disclose the coating nanoparticles with a polyvalent metal ions via aluminum chloride (§ 108) thus Hamers et al. shows that a surface modification of nanoparticle via a Lewis acid was known in the prior art at the time of the invention. Since each individual element and its function are shown in the prior art, albeit shown in separate references, the difference between the claimed subject matter and the prior art rests not on any individual element or function but in the very combination itself- that is in the substitution of the inorganic modifying agent. Thus, the simple substitution of one known element for another producing a predictable result renders the claim obvious. The claims would have been obvious because the technique for improving a nanoparticle agent was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

#### ***Response to Arguments***

7. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 10/09/08 have been fully considered but they are not persuasive.

Applicants argue that the nanoparticles taught by Sloan differ from the claimed invention due to the presence of a polymer encapsulation (pages 7 and 8). The examiner respectfully disagrees and notes that a broad and reasonable interpretation of the instant claims does not preclude the presence of a polymer. Furthermore, it is noted that "comprising" leaves the claim open for the inclusion of unspecified ingredients even in major amounts, see *Ex parte Davis et al.*, 80 USPQ 448 (PTO Ed. App. 1948). Also, the broad "comprising" and "containing" terminology do not exclude the presence of other ingredients in the composition, unlike the narrow "consisting of" language, see *Swain v. Crittenden*, 332 F 2d 820, 14 1 USPQ 8 11 (CCPA 1964).

Applicants argue that the Zuechner and Rohrbaugh references do not disclose the feature of a surface modification of oxides, hydroxides, salts and combinations thereof with Zuechner specifically disclosing phosphonates and carbonic acids and Rohrbaugh disclosing hydrophilic, hydrophobic and mixtures thereof (pages 8-11). The examiner respectfully disagrees and notes that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. Denied, 469 U.S. 851 (1984). Furthermore, a reference is not limited to the working examples, see *In re Fracalossi*, 215 USPQ 569 (CCPA 1982). In the instant case, Zuechner discloses the feature of modifying the nanoscale particles with various chemicals such as alkali metal salt (§ 16-18) and Rohrbaugh discloses the feature of modification via Al+3 (§69).

Applicants argue that the Hamers reference is not combinable with the Soane reference since Hamers teaches surface modified polymeric particles (pages 10 and 11). The examiner

respectfully disagrees and notes that Soane teaches the feature of a polymer layer that is modifiable thus the claims would have been obvious because the technique for improving a nanoparticle agent was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations as shown by Hamers.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRI V. NGUYEN whose telephone number is (571)272-6965. The examiner can normally be reached on M-F 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. V. N./  
Examiner, Art Unit 1796  
January 14, 2009

/Lorna M Douyon/  
Primary Examiner, Art Unit 1796